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ABSTRACT

A pilot study on age integrated learning (AIL) was conducted at Aquinas College during spring semester, 1984. (AIL involves the inclusion of students from all adult age groups in higher educational environments.) The purpose of this exploratory research was to collect data that would allow formulation of specific questions regarding (1) potential personal development and academic benefits to students, and (2) possible dificulties for faculty and/or students that might arise in an AIL format. Eighteen students were recruited for a 10-week, two-credit seminar in psychology, called "Perspectives on the Adult Phases of the Life Cycle." Seven students were aged from 19-22 years; five were aged 36-42, and six were aged 64-81. Three questionnaires (the Student Opinion Questionnaire, the Multidimensional-Multiattributional Causality Scale, and the Student Attitude Questionnaire) were used to measure student attitudes at the beginning and at the end of the 10 weeks. In addition, evaluations of each of the 12 lecture classes and four discussion classes were used and three essay examinations were given. The results of analyses of the questionnaires and the test results showed no significant age, sex, or class differences or interactions. All students rated the course positively. No differences were found in the examination performance across age groups, although older students did allow themselves longer time to complete exams. For the future, it was suggested that courses should allow more opportunities for students to get to know one another. The researchers concluded that since older students are a growing population, AIL needs further study in order to determine whether it can be beneficial for all students and for all course contents. (KC)

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Age Integrated Learning: A Pilot Study

Jerome P. Heckenmueller and Ann Keller

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Heckenmueller and Keller (1984) developed a theoretical model which suggests that integration of students across the adult phases of the life course in higher educational environments should lead to increased personal and academic growth for these young, middle-aged, and older adults. This model is based on Erik Erikson's theory (1963,1964,1982) of psychosocial development and on the theoretical and research literature on personal control, stress, and social support. The core of the Eriksonian rationale is that, first, inter-generational interchange is a necessary condition for healthy individual development, and, second, such interchange will be most beneficial when members of all generations are intellectually prepared to give and receive informed perspectives and information. Empirically, this shared exchange amounts to social support between and among generations. Specifically, social support is a source of stress which can be perceived as either positive or negative by the individual, and which will result in a change in personal control, a major variable that determines an individual's healthy development throughout the life span (cf., Heckenmueller, 1985).

In Spring 1984 a pilot study on age integrated learning (AIL) was conducted. The purpose of this exploratory research was to collect data which would allow formulation of specific questions regarding (a) potential personal development and academic benefits to students and (b) possible difficulties for faculty and/or students which might arise in an AIL format. These hypotheses or questions, then, will be tested in controlled experimental AIL research.

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Method

Participants

Eighteen students completed a 10-week, two-credit PG 391 Seminar in Psychology, Perspectives on the Adult Phases of the Life Cycle: 4 males and 3 females, ranging in age from 19 to 22 years comprised the young group; 3 females, (initially 4 since 1 dropped after completing one-third of the course) and 2 males, ages 36 to 42, the middle-age group; and 3 females and 3 males, ages 64-81, the older group. Student participation was solicited and selection designed to maximize representativeness of respective student populations in terms of age, sex, and previous background in psychology, sociology, and biology of which course content was to consist.

Since this was an exploratory course, tuition was waived for all students.

Measures

Three questionnaire measures were used. The first was a modified version of the Student Opinion Questionnaire (SOQ) developed by Kay, Jensen-Osinski, Beidler, and Aronson (1983) to measure students' attitudes toward (a) their own aging, (b) other generations, (c) intergenerational learning, and (d) their own success in a college class. The possible range of scores on the four subscales measuring each of these variables was: Subscales 1, 2, and 3, 8-32, and Subscale 4, 3-12, with higher scores indicating more positive attitudes. The second questionnaire was the Multidimensional-Multiattributional Causality Scale (MMCS) (Lefcourt, Von Baeyer, Ware, & Cox, 1979) to measure perceived locus of control in affiliative (social) and achievement (academic) situations. Three major subscale scores for Achievement and three for Affiliation can be generated from the MMCS: (a) the internality scale score, which indicates the degree to which individuals attribute success and failure in affiliation and achievement situations to

internal factors of ability and effort; (b) the externality scale score, which indicates the degree to which these are attributed to external factors of context (situation) and luck or chance; and (c) the externality-internality score, which indicates the relative attribution to external and internal factors. The possible range of scores for Achievement and Affiliation scales is as follows: Internality (I), 12-60; Externality (E), 12-60; Externality-Internality (E-I), +48 to -48, with a more negative score indicating greater internality (since this score is generated by subtraction of internality scale score from externality scale score). The third questionnaire was a Student Attitude Questionnaire (SAQ) based on Gruen's (1964) interview measure of resolution of the eight Eriksonian psychosocial crises. Four subscales of this questionnaire were designed to measure the ratio between an individual's favorable and unfavorable attitudes with respect to issues of identity, intimacy, generativity, and integrity. These are the psychosocial crisis issues which Erikson (1963) states need to be addressed in young adulthood (identity), middle-adulthood (intimacy and generativity), and old age (integrity). Erikson states that optimal resolution of these crisis issues is a "favorable balance" of positive over negative attitudes. Scores on each subscale could range from 6.0, indicating the highest positive/negative ratio, to 0.2, indicating the highest negative/positive ratio. Scores close to 1.0 would indicate a relatively even balance of positive and negative attitudes.

In addition to the three questionnaires, evaluations of each of the 12 lecture classes and four discussion classes were used and three non-cumulative, in-class essay exams based on lecture and reading material were given. For class evaluations, overall ratings (i.e., excellent, very good, fair, and poor, ranked 5, 4, 3, 2, 1, respectively) for the five psychology classes, the three sociology, and the four biology classes were averaged to

generate an Average Psychology, Average Sociology, and Average Biology Rating. For discussion day evaluations, overall ratings from excellent (5) through poor (1) were calculated for each of the four periods. Finally, as a measure of time required to complete exams, a rank was assigned each student as the exam was handed in.

Procedure

Lists of potential students were generated by administrators of Aquinas College's Regular, Continuing Education, and Emeritus College Programs. Both investigators contacted an initial group by letter, resulting in an insufficient sample size. Therefore, a second group was contacted by phone. Nineteen students, then, were selected and registered for the course. It should be noted that interest was high in all age groups; scheduling conflicts were given as reasons for "No" responses in 50% (Regular and Continuing Education) to 85% (Emeritus) of the first groups contacted.

The PG 391 course (with exception of student selection and tuition waiver procedures) was a regular, for-credit course offering. Classes met from 4:00 to 5:20 PM on Mondays and Wednesdays from February 20 through May 7. Three exams were given and letter grades assigned. Course content dealt with topics from psychology, sociology, and biology which focused on developmental issues from young adulthood through old age (See Class Schedule in Appendix I.). Drs. Jerome Heckenmueller and Ann Keller were instructors of record and lectured on topical issues within their own respective areas of expertise. Guest lectures from Aquinas full-time faculty and from outside the college presented in order to (a) allow coverage of a broad range of topical areas and (b) age integrate, as far as possible, faculty as well as students (See list of guest lecturers and affiliations in Appendix II.)

In addition to the 12 lecture classes, four discussion periods were included. In these, students separated into three age-integrated groups to dicusss lecture and study materials.

In the first week and again in the last week of the course, students were given three questionnaire measures to complete at home and return. Evaluations were distributed at the end of each class to be returned at the next meeting.

All class meetings were video and audio taped.

Results

The average scores for young, middle-aged, and older students for the SOQ, the MMCS, and the SAQ are shown in Tables 1, 2, and 3, respectively. Analyses of variance on these data showed no significant differences between age groups and no differences in comparison of pre- and post-test scores; nor were there any interactions by age, sex, or pre-post test.

Insert Table 1 about here

Insert Table 2 about here

Insert Table 3 about here

Similarly, analysis of overall rankings of Psychology, Sociology, and Biology classes showed no significant age, sex, or class differences or interactions. Mean rankings by age group are shown in Table 4.

Insert Table 4 about here

With regard to discussion day (DD) evaluations, no meaningful comparisons could be made because of the low return rate in the young student group (i.e., DD-1, $n=6$; DD-2, $n=4$; DD-3, $n=1$; DD-4, $n=2$). Mean overall ratings for the middle-aged group were 3.6, 4.6, 4.6, and 5.0 for discussion days 1, 2, 3, and 4, respectively. Ratings for the older student group were 4.2, 4.2, 4.2, and 4.5, for discussion days 1, 2, 3, and 4, respectively.

Mean scores for young, middle-aged, and older students on exams 1, 2, and 3 are shown in Table 5. The MANOVA showed a significant Pre-Post main effect, indicating that all students performed better on the second and third exams than on the first [($F(1,12)=8.39$, $p < .05$, for exam 1 vs. 2; $F(1,12)=6.01$, $p < .05$, for exam 1 vs. 3).]

Insert Table 5 about here

Analysis of exam time data indicated that on average, older students took longer than young and middle-aged students on all three exams [($F(1,11)=18.2$, $p < .001$, for exams 1 and 2; $F(1,11)=21.5$, $p < .001$, for exams 1 and 3; $F(1,11)=22.03$, $p < .001$, for exams 2 and 3).] Mean ranks and ranges for young, middle-aged and older students for exams 1, 2, and 3 are shown in Table 6.

Insert Table 6 about here

Discussion

Our discussion will focus briefly on the analysis of the data just reported but primarily on problems we encountered in this exploratory work, on our subjective impressions of the success of this AIL course, and on our view of the future place of AIL in higher education.

Only very cautious and limited discussion and interpretation of the data from the AIL study can be appropriately made, for at least three reasons: (a) the student sample was very small; (b) the student participants represented a highly select group and are not necessarily representative of more general student populations; and, (c) the reliability and validity of the questionnaires used are open to question. Indeed, a part of the preparation and design of future experimental AIL research will include consideration of revision of these measures and/or substitution with measures having greater demonstrated reliability and validity as well as possible use of additional types of questionnaires.

With these cautions in mind, we can say that the data indicated that all students rated the course positively and that there was little if anything in the way of meaningful differences among the three age groups, academically or psychologically, either at the outset or at the end of the course. While inspection of the age group means for the MMCS suggested that older students were stronger in their sense of internal control over academic and social situations than were the young and middle-aged students, the MANOVA indicated these mean differences did not reach significance due to the very high within group variability. One interpretation of this finding is that I-E is an individual difference rather than an age-related phenomenon.

As with the questionnaire and class evaluation data, no differences were found in exam performance (scores) across age groups, though older students

did, on average, allow themselves more time to complete exams. We have no data which would tell us whether this difference was a function of greater cautiousness or slower cognitive and/or motor activity in the older group. Only future well-controlled AIL research will substantiate similarities and differences among young, middle-aged, and older students and will help define specific benefits to be gained by them from AIL.

There were some problems. One, from all students' perspectives, centered on lack of opportunity for interaction. Two alternatives we would see in future would address the following: First, physically, the classroom needs to be one in which chairs can be easily arranged to allow student exchange; our classroom was not. Second, for students to gain maximum benefit from AIL, perhaps the format should be other than a twice weekly class of one hour and twenty minutes, especially where a significant lecture component is essential to the course, as was the case with our class.

Also, if specific discussion class periods are part of the course, objectives need to be clearly defined (i.e., getting to know one another versus sharing views on topics covered or preparing for an exam).

A final important and related issue is the specific content of the course. Younger students felt that our PG 391 content focused more on the latter part of the life course and, so, their contribution was constrained by their lack of experience. Clearly, course material needs to be such that it allows/facilitates contributions by students of all ages.

Caveats and problems notwithstanding, our subjective impressions tell us that everyone (students as well as Aquinas and guest faculty) thoroughly enjoyed the course. Students felt they had learned a lot about course content and about one another; we agreed. Where "differences of opinion" or course format problems did exist, young, middle-aged and older students seemed to

feel free to voice these and we believe we were quite successful in resolving them. Our video tapes (on which analyses are in process) show this positive intergenerational mix.

A final summary comment: With the increases in healthy life-expectancy and increases in levels of educational attainment of older adults (Demko & McKinlay, 1984) this group should provide a "new market" for institutions of higher education. The future viability and strength of these institutions may, indeed, depend on their ability to meet the needs of this new population while continuing to meet those of young and middle-aged students.

As one part of working toward this goal, we need to systematically address among other questions whether or not integration of students of different ages has positive personal development outcomes, whether learning is enhanced when students across the adult phases of the life course interact, whether this occurs for most or for all students, and whether these positive outcomes are associated with AIL across courses and disciplines or are limited to certain kinds of course content.

The AIL Pilot Study done in Spring 1984 was a first step towards addressing these questions.

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TABLE I

Average SOQ Subscale Scores for Young, Middle-Aged, and Older Students

	Subscale I (Own aging)		Subscale II (Other Generations)		Subscale III (Intergen. Learn.)		Subscale IV (Own success In college class)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Young	24.9	25.5	24.1	24.1	28.4	27.6	10.6	9.7
Middle-Aged	25.0	25.0	26.0	27.6	27.7	29.6	10.2	10.0
Old	24.6	24.3	23.2	24.3	28.6	27.8	10.0	10.2

TABLE 2

Average MMCS Achievement and Affiliation Scores for Young, Middle-Aged, and Older Students

	Achievement						Affiliation					
	I		E		E-I		I		E		E-I	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Young	43.7	42.3	35.6	36.0	-8.1	-6.3	40.1	38.5	34.9	36.0	-5.3	-2.5
Middle-Aged	39.5	39.2	29.8	32.6	-9.7	-6.6	38.6	39.5	34.5	33.4	-4.0	-6.2
Old	41.3	43.2	33.2	29.0	-8.2	-14.2	43.7	44.6	37.0	34.6	-6.7	-10.6

TABLE 3

Average SAQ Scores for Young, Middle-Aged and Older Students

	Identity		Intimacy		Generativity		Integrity	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Young	1.6	1.7	1.8	1.8	1.7	1.8	1.7	1.9
Middle-Aged	1.5	1.6	1.6	1.7	1.5	1.7	1.6	1.8
Old	1.2	1.5	1.3	1.6	1.4	1.6	1.4	1.7

TABLE 5

Average Exam Scores for Young, Middle-Aged and Older Students

	Exam 1	Exam 2	Exam 3
Young	70.6	90.7	88.1
Middle-Aged	81.7	90.8	86.6
Old	81.0	86.3	88.8

TABLE 4

Average Overall Psychology, Sociology, and Biology Class Ratings by Young, Middle-Aged and Older Students

	Psychology	Sociology	Biology
Young	3.9	4.5	4.5
Middle-Aged	4.3	4.0	4.5
Old	4.2	4.0	4.3

TABLE 6

Average Ranks and Ranges for Completion Times on
Exams 1, 2, and 3 for Young, Middle-Aged and Older Students

	EXAM 1		EXAM 2		EXAM 3	
	X Rank	Range	X Rank	Range	X Rank	Range
Young	7.7	(1-15)	5.8	(2-11)	6.8	(2-11)
Middle-Aged	7.3	(3-11)	6.2	(1-10)	5.0	(1-10)
Old	15.3	(12-19)	14.5	(12-17)	14.5	(12-17)

APPENDIX I

PG 391 Seminar in Psychology:
Perspectives on the Adult Phases of the Life Cycle

Class Schedule

DATE	TOPIC	INSTRUCTOR
Feb. 20	Orientation	Heckenmueller/Keller
Feb. 22	Models of Psychosocial Development I	Keller
Feb. 27	Models of Psychosocial Development II	Sanborn
Feb. 29	Life Span Personality Development	Keller
March 5	Personal Control	Heckenmueller
March 7	Sensory Changes	Frayman
March 12	Mid Term Break	
March 14	Mid Term Break	
March 19	Discussion Day I	
March 21	Exam I	
March 26	Sociological Issues in Later Life	Riekse
March 28	Family and Intergenerational Relations	(Cancelled)
April 2	Adult Socialization I	Kielich
April 4	Adult Socialization II	Kielich
April 9	Discussion Day II	
April 11	Exam II	
April 16	Stress: Psychophysiological Aspects	Heckenmueller
April 18	Stress: Psychosocial Aspects	McDonald
April 23	Easter Break	
April 25	Discussion Day III	
April 30	Biology of Aging	Adleman
May 2	Developmental Issues in Health and Disease	Hickey
May 7	Discussion Day IV	
May 10	Exam III	

APPENDIX II

Guest Lecturers and their Affiliations

Dr. Bruce G. Frayman	Assoc. Professor of Psychology Aquinas College
Dr. Lawrence Kielich	Professor of Sociology Aquinas College
Sr. Harriet Sanborne, O.P.	Emeritus Professor of Psychology Aquinas College
Dr. Robert Rieke	Dept. of Sociology Grand Rapids Junior College
Dr. Richard Adleman	Director, Inst. of Gerontology University of Michigan
Dr. Tom Hickey	Director, Health Gerontology School of Public Health University of Michigan
Mr. Marvin McDonald	Clinical Intern Pinerest Christian Hospital

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